Agroscope

MSc-thesis: Comparing the biodiversity of birds or bats in biodiversity hedges vs. fodder hedges

Start: September 2026 (or upon agreement)
Duration: 6-12 months
Working place: Agroscope Reckenholz, Zürich and Schweizerische Vogelwarte, Sempach
Language: German/English
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Intact ecosystems are the basis for human well-being. However, ecosystem functions are often restricted by intensive agricultural land-use due to the demand of producing cheap food. The solution might be innovative approaches that consider biodiversity, production and sustainability. Fodder hedges are a rather novel approach to produce fodder for livestock and could at the same time also promote ecosystem services such as carbon storage, pollination or promote biodiversity such as the diversity of birds and bats. However, compared to subsidized biodiversity promotion hedges, fodder hedges are strongly managed and cut more often. Since fodder hedges have only recently been established in Switzerland (accompanied by Agroscope research projects), their value for biodiversity and ecosystem services has not yet been studied well, compared to the value of other hedge types.

Objective

The aim of this Master thesis is to compare the biodiversity and species community of birds and/or bats (depending on the interest of the student) recorded in biodiversity promotion hedges and in hedges planted to produce fodder production. The MSc-student will analyse the recordings of the animal's sounds (using bioacoustics software and analysis methods) from the field season April to July 2026. Based on these recordings, species richness of birds and bats, and potentially also activity of bats (hunting and feeding) can be evaluated.

Research questions

- Do number (or activity) of bird and/or bat species differ between fodder and biodiversity promotion hedges?
- What are the effects of the surrounding landscape (e.g. distance to the next woody habitats, cover of biodiversity promotion areas in the surroundings, etc.) on the observed patterns?

Requirements

- Master's level studies in environmental sciences, biology, ecology or agricultural sciences
- Interest in effects of agricultural practices and landscape factors on biodiversity
- Motivation to carry out analyses of bird and/or bat sounds and statistical analyses
- Knowledge or strong interest to learn bird sounds (not necessary when only working with bats)

What we offer

- Opportunities to bring in own ideas
- Insights into research at the interface between biodiversity promotion and agricultural practices/production
- Close supervision and integration into two groups (Agricultural Landscapes and Biodiversity group at Agroscope and Species Conservation Unit at Vogelwarte)